Appl. No.: 10/821,703

Amdt. Dated: September 25, 2006

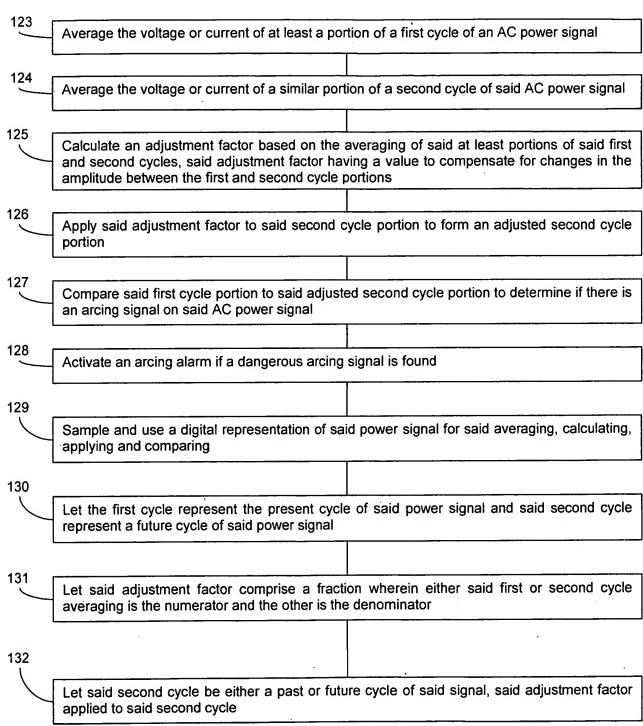
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NEW SHEET 1

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FIG. 31



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dangerous arcing condition exists

NEW SHEET 2 FIG. 32 27/27 141 Detect past, present and future cycles of a power supply signal 142 Compare a region from a present cycle of said signal to a similar region in said past cycle and in said future cycle and make a determination as to which the present cycle would correlate better with for arc monitoring 143 Adjust the amplitude of either said past or future cycles to adjust for amplitude decay or increase of said power supply signal 144 Subtract the present cycle from either said past or future cycle to form an arc signal artifact waveform 145 Analyze said arc signal artifact waveform to determine if an arcing condition exists 146 Let the amplitude adjusting comprise calculating an adjustment factor based on the averaging of at least a portion of said present cycle and the averaging of at least a portion of either said past or future cycles 147 Let the adjustment factor comprise a fraction having the averaging of said present cycle as the numerator and the averaging of either said past or future cycles as the denominator Generate an alarm if said analyzing said arc signal artifact waveform determines that a